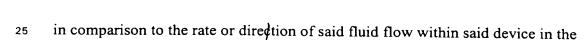
## WHAT IS CLAIMED IS:

1 1 14. A method for regulating fluid flow in a device that conducts fluid through one or more capillary channels, comprising:

introducing fluid into a capiflary channel comprising (i) a first capillary region

- 4 comprising a hydrophilic surface and (ii) a second capillary region comprising a
- bydrophobic surface adjacent to said first capillary region, whereby fluid flows
- 6 through said first capillary region to contact said hydrophobic surface.
- The method of claim 74, wherein said device further comprises a third capillary region comprising a hydrophilic surface adjacent to said second capillary region, wherein said hydrophobic surface controls the rate of flow of said fluid into
- region, wherein said hydrophobic surface controls the rate of flow of said fluid into
- said third capillary region.
- The method of claim 75, wherein said hydrophobic surface delays fluid flow into said third capillary region until rendered hydrophilic.
- The method of claim 74, wherein said device comprises a plurality of capillary channels, one or more of which comprise a region comprising a hydrophobic surface.
- The method of claim 75, wherein said device further comprises a vent.
- 16 6 79. A method for regulating fluid flow in a device that conducts fluid through one or more capillary channels, comprising:
- contacting said fluid with one or more hydrophobic regions on a capillary surface that
- alter a rate or direction of said fluid flow within said device in comparison to a rate or
- direction of fluid flow within said device in the absence of said hydrophobic region.
- 21/80. The method of claim 79, further comprising contacting said fluid with a first
- capillary region and a second capillary region adjacent to said first capillary region,
- wherein a difference in capillarity of said first capillary region compared to said
- second capillary region alters a rate or direction of said fluid flow within said device



- absence of said difference in capillarity.
- The method of claim 7/9, further comprising contacting said fluid with a
- reagent dried on a surface of the device, whereby said reagent dissolves into said
- 29 fluid, thereby lowering the surface tension of said fluid.
- 700 82. The method of claim 79, wherein said device comprises a plurality of capillary channels.
- 32/ 83. The method of claim 79, wherein one or more of said hydrophobic regions are flanked by hydrophilic regions.
- 34 2 84. The method of claim 79, wherein at least one of said hydrophobic regions alter the rate of flow within said device.
- 36 35. The method of claim 84, wherein said hydrophobic region(s) that alter the rate of flow within said device retard fluid flow until rendered hydrophilic.
- 38 4 86. A device that conducts fluid through one or more capillary channels, comprising:
- a capillary channel comprising (i) a first capillary region comprising a hydrophilic
- surface and (ii) a second capillary region comprising a hydrophobic surface adjacent
- to said first capillary region.
- The device of claim 86, wherein said device further comprises a third capillary region comprising a hydrophilic surface adjacent to said second capillary region.
- The device of claim 86, wherein said hydrophobic surface alters a rate or direction of fluid flow within said device.
- The device of claim 86, further comprising a reagent dried on a surface of the device that, when dissolved into reagent dissolves into fluid within said device, lowers
- 49 the surface tension of said fluid.



- The device of claim 86, wherein said device comprises a plurality of capillary channels.
- 52 \( \frac{1}{1}. \) A method for regulating fluid flow in a device that conducts fluid through one or more capillary channels, comprising:
- introducing fluid into a capillary channel comprising (i) a first capillary region
- comprising a surface having a first contact angle and (ii) a second capillary region
- adjacent to said first capillary region comprising a surface having a second contact
- angle less than that of said first contact angle, whereby fluid flows through said first
- capillary region to contact said second capillary region.
- The method of claim 91, wherein said device further comprises a third
- 60 capillary region adjacent to said second capillary region comprising a surface having a
- third contact angle greater than that of said second contact angle, wherein the rate of
- flow of said fluid into said third capillary region is regulated by the flow of fluid
- 63 through said second capillary region.
- 64 93. The method of claim 92, wherein said second capillary region delays fluid
- flow into said third capillary region until said second contact angle is increased.